500.41256X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: HIROTA et al

Serial No.: 10/082,113

Filed: February 26, 2002

For: Liquid Display Element and Display Unit Using Thereof

Art Unit: 2871

Examiner: J. Di Grazio

REQUEST FOR RECONSIDERATION

Mail Stop: Response (No Fee)
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 19, 2005

Sir:

The following remarks are respectfully submitted in connection with the above-identified application, in response to the Office Action dated April 19, 2005.

The rejection of claims 1, 13 and 16 under 35 USC 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al); the rejection of claims 3 - 6, 18 - 21, 30 and 31 under 35 USC 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) and further in view of United States Patent 6,542,211 B1 (to Okada); the rejection of claims 7, 8, 22 and 23 under 35 USC 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) in view of United States Patent 6,542,211 B1 (to Okada) and further in view of Kitagishi Nozomi (JP-07-

318861); the rejection of claims 9 - 12 and 24 - 27 under 35 USC 103(a) as being unpatentable over United State Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) in view of United States Patent 6,542,211 B1 (to Okada) and further in view of United States Patent 6,473,144 B1 (to Ichikawa et al); the rejection of claims 14, 15, 32 and 33 under 35 US 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) and further in view of Tanaka (US 5,895,108); the rejection of claims 28 and 29 under 35 USC 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) in view of United States Patent 6,542,211 B1 (to Okada) and further in view of United States Patent 6,417,941 B1 (to Inoko); and the rejection of claims 34 - 37 under 35 USC 103(a) as being unpatentable over United States Patent 6,295,109 B1 (to Kubo et al) in view of United States Patent Application No. US 2002/0047968 A1 (to Yoshida et al) and further in view of United States Patent 5,729,306 (to Miyaki et al); such rejections are traversed and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be

established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Applicants note that claims 1 and 16 are the only independent claims in this application with the remaining claims being directly or indirectly dependent therefrom. Each of independent claims 1 and 16 recite the feature that "an optical axis of an incident light beam upon the liquid crystal layer and an optical axis of an emergent light beam from the liquid crystal layer are present in a plane which is substantially perpendicular to a direction of orientation of liquid crystal molecules on

the two substrates" and that "the incident light beam impinges upon the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction of the normal line of the substrate". (emphasis added). Looking to Fig. 1A of the drawings of this application, it is noted that a liquid crystal layer 111 having liquid crystal molecules 101 is disposed between an upper substrate 103 and a lower substrate 102 with the oriented state of liquid crystal molecules 101 being substantially parallel to the substrate in the manner indicated. As shown in Fig. 1A, and as described at page 11 of the specification of this application, the optical axis of an incident beam 105 and the optical axis of emergent beam 106 is present in a plane which is orthogonal to the direction of orientation of the liquid crystal molecules. That is, the plane which is perpendicular to the orientation direction of liquid crystal molecules in Fig. 1A lies in the plane of the sheet of Fig. 1A and both optical axes lie therein. Further, both optical axes make a predetermined angle θ (109) with respect to a direction normal (104) of the substrate 102, as shown in Fig. 1A. Thus, it is apparent from Fig. 1A that the incident light as represented by the incident beam 105 impinges upon the liquid crystal layer 111 in a direction which is inclined by a predetermined angle to the direction of the normal line of the substrate, as recited in each of independent claims 1 and 16 and therewith the dependent claims. Applicants submit that the aforementioned features of independent claims 1 and 16 and the dependent claims are not disclosed or taught in the cited art in the sense of 35 USC 103 and all claims patentably distinguish thereover.

In applying the cited art to independent claims 1 and 16, the Examiner recognizes that Kubo et al does not disclose various features of claims 1 and 16. Although the Examiner contends that Kubo et al does not appear to explicitly specify the quoted features of claims 1 and 16, which include the above-noted quoted and

emphasized features of claims 1 and 16, the fact remains that not only does Kubo et al not "explicitly specify" such features, but Kubo et al provides no disclosure or teachings of such features.

In order to overcome this recognized deficiency of Kubo et al, the Examiner refers to Yoshida et al, and contends that applicant in the disclosure has described criteria for the liquid crystal material used in the invention, and since Yoshida et al has some of the features as described by applicant, Yoshida et al must necessarily provide the other claimed features. More particularly, the Examiner, at page 5 of the office action after describing applicants' enabling disclosure with reference to Fig. 1A, sets forth in the first paragraph at page 5 of the office action, that the above criteria for the liquid crystal material results in the structure of Figs. 1A and 1B which relates to the drawings of applicants' invention and that the above criteria results in quoted features as recited in independent claims 1 and 16. The Examiner thus concludes in the second paragraph at page 5 of the office action:

> Because the material used in Yoshida is the same liquid crystal material used by Applicant, then the Yoshida material must therefore exhibit "an optical axis of an incident light beam upon the liquid crystal layer and an optical axis of an emergent light beam from the liquid crystal layer are present in a plane which is substantially perpendicular to a direction of orientation of liquid crystal molecules on the two substrates, the incident light beam impinges upon the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction of the normal substrate an a direction of polarization of the incident light beam upon the liquid crystal is substantially perpendicular or parallel to the direction of the orientation of the liquid crystal molecules." (emphasis added).

Irrespective of the Examiner's contention, applicants submit that Yoshida et al does not overcome the deficiencies of Kubo et al in relation to the quoted features as contended by the Examiner, and that Yoshida et al specifically does not disclose the recited feature of claims 1 and 16 that "the incident light impinges upon the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction

of the normal line of the substrate". That is, the last sentence of the Abstract of Yoshida et al, the penultimate sentence of paragraph [0011] of Yoshida et al, and the last paragraph of claim 1 of Yoshida et al, recite the feature of a first phase compensation element which compensates for a retardation of the liquid crystal layer in a black display state "with respect to vertical incident light on the liquid crystal layer". (emphasis added) Applicants therefore submit that Yoshida et al discloses and teaches that incident light impinges on the liquid crystal layer in a direction which is along the direction of the normal line to the substrate, and specifically does not disclose and, in fact, teaches away from the recited feature of independent claims 1 and 16 that "the incident light impinges upon the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction of the normal line of the substrate". (emphasis added). Thus, applicants submit that Yoshida et al, taken alone as in combination with Kubo et al, does not disclose or teach the claimed features of independent claims 1 and 16 and the dependent claims thereof in the sense of 35 USC 103, and all claims should be considered allowable thereover.

Applicants further submit that the Examiner has engaged in speculation as to the disclosure of Yoshida et al, apparently contending that since some characteristics are similar to that disclosed in the present application, all other characteristics, as disclosed in the specification of this application and representing claimed features of the invention, necessarily follow. As pointed out in the decision of In re Lee, supra, it is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." Furthermore, the Examiner's position that since some of the characteristics of Yoshida et al, which correspond to characteristics of the present invention as disclosed in the specification of the

application and therefore, other characteristics of the present invention, as disclosed in the specification of the application and are claimed, necessarily follow, represents a contention of "inherency" with respect to the disclosure of Yoshida et al. However, reference is made to the decision of In re Robertson, 49 USPQ 2nd 1949 (Fed. Cir. 1999) as to a showing of "inherency." The Court pointed out to establish inherency, extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill." (emphasis added) Moreover, the Court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. It is evident that Yoshida et al does not provide a disclosure or teaching of the claimed features of claims 1 and 16, as contended by the Examiner, and that such features are not inherent therein, since, as pointed out above, Yoshida et al specifically discloses that such claimed features are not present therein. Thus, applicants submit that Yoshida et al fails to disclose the claimed features in the sense of 35 USC 103 and that the combination of Yoshida et al with Kubo et al fails to provide such claimed features, and that all claims patentably distinguish thereover in the sense of 35 USC 103 and should be considered allowable thereover.

With regard to the dependent claims, it is noted that all claims depend directly or indirectly from claims 1 and 16 and incorporate the aforementioned features of claims 1 and 16 therein which are not disclosed by the combination of Kubo et al and Yoshida et al in the sense of 35 USC 103. As to the other cited art to Okada, Kitagishi Nozomi, Ichikawa et al, Tanaka, Inoko, and Miyake et al, applicants submit that these additional references, taken alone or in any combination thereof, with the

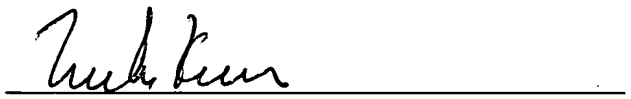
combination of Kubo et al and Yoshida et al fail to overcome the deficiencies as pointed out above with respect to Kubo et al and Yoshida et al in relation to the claimed features of independent claims 1 and 16, and the dependent claims thereof. Accordingly, a further discussion of the deficiencies of these additional references is considered unnecessary. Applicants note, however, that for example, dependent claims 5 and 20, which depend indirectly from claims 1 and 16, respectively, recite the feature that "an angle between an optical axis of an optical path in the liquid crystal layer and the direction of a normal line of the substrate is set to be larger than a total reflection angle upon emanation of the light beam from the substrate into the air." Applicants submit that Yoshida et al fails to disclose or teach such feature which is also not disclosed or taught by Kubo et al and the other cited art. Applicants note that in order to set the angle between the optical axis of the light path in the liquid crystal layer and the normal line to the substrate to be larger than the total reflection angle when a light beam goes from the substrate into air or atmosphere, it is necessary to introduce a light beam into the liquid crystal layer in such a way that the angle with respect to the normal line to the substrate is larger than the total reflection angle when a light beam goes from the substrate into the atmosphere, as obtained with use of a trapezoidal prism or the like. Applicants submit that Yoshida et al and the other cited art fails to disclose or teach such relationship and the manner of obtaining such relationship in the manner set forth in the claims of this application, such that the dependent claims recite further features not disclosed or taught in the cited art in the sense of 35 USC 103 and such claims patentably distinguish over the cited art and should be considered allowable thereover.

In view of the above response, applicants submit that all claims patentably distinguish over the cited art and should now be in condition for allowance such that an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 500.41256X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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